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AMENDMENT

(Amendment based on a provision of Patent Law Article 11)

TO: Commissioner of Japanese Patent Office

1. Identification of the International Application

PCT/JP2004/013812

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4. Item to be Amended:

Description and Claims

5. Subject Matter of Amendment

(1) "A material derived from an edible plant" in lines 16 to 17 of page 15 in the Description should be amended to "a material derived from an edible plant and containing a glucides whose major component is a polysaccharide.."

(2) The following should be added to line 10 of page 18 in the Description.

"It is desirable that the facultative anaerobic gram-negative bacterium is bacillus belonging to genus *Pantoea* and the edible plant is a food grain, a seaweed or a bean, or a mixture thereof.

It is desirable that the facultative anaerobic gram-negative bacterium is *Pantoea agglomerans* and the edible plant is a food grain, a seaweed or a bean, or a mixture thereof.

It is desirable that the material derived from the food grain is wheat flour, rice powder, wheat bran powder, rice bran or sake lees.

It is desirable that the material derived from the seaweed is brown seaweed powder, mekabu powder or kelp powder."

(3) "A material derived from an edible plant" in claim 1 on page 73 should be amended to "a material derived from an edible plant and containing a glucides whose major component is a polysaccharide."

(4) Claims 18 to 29 should be added to page 75 as follows.
[18] (New) The method for fermentation and culture according to any of claims 1 to 3 characterized in that said facultative anaerobic gram-negative bacterium is bacillus belonging to the genus *Pantoea* and said edible plant is a food grain, a seaweed

or a bean, or a mixture thereof.

[19] (New) The method for fermentation and culture according to claim 18 characterized in that a material derived from said food grain is wheat flour, rice powder, wheat bran powder, rice bran or sake lees.

[20] (New) The method for fermentation and culture according to claim 18 characterized in that a material derived from said seaweed is brown seaweed powder, mekabu powder or kelp powder.

[21] (New) A fermented plant extract characterized by being obtained by the method for fermentation and culture according to any of claims 18 to 20.

[22] (New) Fermented plant extract powder characterized by being obtained from the fermented plant extract according to claim 21.

[23] (New) A fermented plant extract composition characterized in that the fermented plant extract according to claim 21 or the fermented plant extract powder according to claim 22 is contained.

[24] (New) The method for fermentation and culture according to any of claims 1 to 3 characterized in that said facultative anaerobic gram-negative bacterium is *Pantoea agglomerans* and said edible plant is a food grain, a seaweed or a bean, or a mixture thereof.

[25] (New) The method for fermentation and culture according to any of claim 24 characterized in that a material derived from said food grain is wheat flour, rice powder, wheat bran powder, rice bran or sake lees.

[26] (New) The method for fermentation and culture according to claim 24 characterized in that a material derived from said seaweed is brown seaweed powder, mekabu powder or kelp powder.

[27] (New) A fermented plant extract characterized by being obtained by the method for fermentation and culture according to any of claims 24 to 26.

[28] (New) Fermented plant extract powder characterized by being obtained from the fermented plant extract according to claim 27.

[29] (New) A fermented plant extract composition characterized in that the fermented plant extract according to claim 27 or the fermented plant extract powder according to claim 28 is contained.

6. List of Attached Documents

- (1) Description, pages 15, 15/1, 18, and 18/1
- (2) Claims, pages 73, 73/1, 75, 75/1 and 75/2

difficult to inexpensively provide as a highly common immunopotentiator. Simultaneously, the possibility that unknown harmful substances such as those derived from BSE contaminated animals could not be denied.

[0014]

In the light of the above problems, the present invention aims at providing a method for fermentation and culture in which an immunopotentiator can be obtained inexpensively and efficiently using safe materials, a fermented plant extract obtained by the method, fermented plant extract powder obtained from the fermented plant extract and a fermented plant extract composition containing the fermented plant extract powder.

[Means for Solving the Problem]

[0015]

The method for fermentation and culture of the present invention is characterized in that a material derived from an edible plant and containing a glucides whose major component is a polysaccharide is fermented by a facultative anaerobic gram-negative bacterium which lives in a symbiotic relationship exclusively with a plant and simultaneously the facultative anaerobic gram-negative bacterium is cultured.

[0016]

The fermentation and culture can be performed in a simple

process by fermenting starch as a carbon source by the

pharmaceuticals, pharmaceuticals for animals, quasi drugs, cosmetics, foods, functional foods, feedstuff, or bath agents.

[0029]

It is desirable that the fermented plant extract has the following physicochemical properties.

[0030]

The fermented plant extract exhibits an ability of macrophage activation even with the presence of polymyxin B. The fermented plant extract has the immunopotential effect.

It is desirable that the facultative anaerobic gram-negative bacterium is bacillus belonging to genus *Pantoea* and the edible plant is a food grain, a seaweed or a bean, or a mixture thereof.

It is desirable that the facultative anaerobic gram-negative bacterium is *Pantoea agglomerans* and the edible plant is a food grain, a seaweed or a bean, or a mixture thereof.

It is desirable that the material derived from the food grain is wheat flour, rice powder, wheat bran powder, rice bran or sake lees.

It is desirable that the material derived from the seaweed is brown seaweed powder, mekabu powder or kelp powder.

[Effect of the Invention]

[0031]

According to the present invention, since the culture is performed in the medium containing no component derived from an animal, there is no contamination with impurities derived from animal components. Therefore, there is no possibility of unknown harmful substances such as those derived from BSE contaminates, and it is possible to provide a highly safe and inexpensive method for producing fermented plant extract capable of addressing various intended uses and safely and inexpensively provide fermented plant extract or fermented plant extract powder containing the immunopotentiator. Furthermore, it is possible to provide the culture solution, the immunopotentiator and the extract and the extract powder,

CLAIMS

[1] A method for fermentation and culture characterized in that a material derived from an edible plant and containing a glucides whose major component is a polysaccharide was fermented by a facultative anaerobic gram-negative bacterium which lives in a symbiotic relationship exclusively with a plant and simultaneously said facultative anaerobic gram-negative bacterium is cultured.

[2] The method for fermentation and culture according to claim 1 characterized in that said material is exclusively edible.

[3] The method for fermentation and culture according to claim 1 or 2 characterized in that starch is fermented as a carbon source.

[4] The method for fermentation and culture according to any of claims 1 to 3 characterized in that said facultative anaerobic gram-negative bacterium is bacillus.

[5] The method for fermentation and culture according to claim 4 characterized in that said facultative anaerobic bacillus belongs to the family *Enterobacteriaceae*.

[6] The method for fermentation and culture according to claim 4 characterized in that said facultative anaerobic bacillus belongs to the genus *Pantoea*, *Serratia* or *Enterobacter*.

[7] The method for fermentation and culture according to claim

4 characterized in that said facultative anaerobic bacillus

contained.

[15] The fermented plant extract composition according to claim 14 characterized in that said fermented plant extract composition is a pharmaceutical, a pharmaceutical for animals, a quasi drug, a cosmetic, a food, a functional food, a feedstuff, or a bath agent.

[16] The fermented plant extract according to claim 12 characterized by exhibiting physicochemical properties which are an ability of macrophage activation even with the presence of polymyxin B.

[17] The fermented plant extract according to claim 12 or 16 characterized by having an immunopotential activity.

[18] (New) The method for fermentation and culture according to any of claims 1 to 3 characterized in that said facultative anaerobic gram-negative bacterium is bacillus belonging to the genus *Pantoea* and said edible plant is a food grain, a seaweed or a bean, or a mixture thereof.

[19] (New) The method for fermentation and culture according to claim 18 characterized in that a material derived from said food grain is wheat flour, rice powder, wheat bran powder, rice bran or sake lees.

[20] (New) The method for fermentation and culture according to claim 18 characterized in that a material derived from said

seaweed is brown seaweed powder, mekabu powder or kelp powder.

[21] (New) A fermented plant extract characterized by being obtained by the method for fermentation and culture according to any of claims 18 to 20.

[22] (New) Fermented plant extract powder characterized by being obtained from the fermented plant extract according to claim 21.

[23] (New) A fermented plant extract composition characterized in that the fermented plant extract according to claim 21 or the fermented plant extract powder according to claim 22 is contained.

[24] (New) The method for fermentation and culture according to any of claims 1 to 3 characterized in that said facultative anaerobic gram-negative bacterium is *Pantoea agglomerans* and said edible plant is a food grain, a seaweed or a bean, or a mixture thereof.

[25] (New) The method for fermentation and culture according to any of claim 24 characterized in that a material derived from said food grain is wheat flour, rice powder, wheat bran powder, rice bran or sake lees.

[26] (New) The method for fermentation and culture according to claim 24 characterized in that a material derived from said seaweed is brown seaweed powder, mekabu powder or kelp powder.

[27] (New) A fermented plant extract characterized by being obtained by the method for fermentation and culture according to any of claims 24 to 26.

[28] (New) Fermented plant extract powder characterized by being obtained from the fermented plant extract according to claim 27.

[29] (New) A fermented plant extract composition characterized in that the fermented plant extract according to claim 27 or the fermented plant extract powder according to claim 28 is contained.